

## PREVAILING WINDS.

As is generally the case, the prevailing winds are strictly conformed in direction to the "law of the winds." The arrows which represent their direction veer around the area of high pressure in the usual way, *i. e.*, with the hands of a clock. The extreme maximum movements of the wind have been at Breckenridge, 7,650 miles; at Cape Henry, 9,147; at Cape May, 6,907; at Cleveland, 7,281; at Escanaba, 7,217; at Long Branch, 9,242; at Pike's Peak, 14,734; at Sandy Hook, 10,917.

The extreme minimum movements have been at Memphis, 1,700 miles, and at Shreveport, 1,886. The calm-area is, therefore, coterminous with that of high pressure.

## NAVIGATION.

On the lower left side of Map No. III, is given a Table showing the varying stages of the rivers for the month. From this table, it is seen, the rivers have fluctuated but very little, and almost inappreciably; some, only a few inches; none, more than eight feet. With the exception of the Ohio, at Louisville, the Missouri, at Yankton, and the Red River, at Shreveport, all the rivers have been slowly falling during October, the greatest falls being reported toward the close of the month.

## TEMPERATURE OF WATER.

The water temperatures, from observations taken at the bottom, have been as follows:

	MAXIMUM.	MINIMUM.		MAXIMUM.	MINIMUM.
Lower Missouri river.....	62° to 67°	53° to 39°	From Portland, Maine, to		
Upper Mississippi river.....	60 to 67	53 to 39	Cape Cod.....	55 to 65	51 to 56
Red river.....	78	62	From Cape Cod to Cape		
Ohio river.....	64 to 70	51 to 46	Henry.....	63 to 70	56 to 60
The Texas coast.....	79 to 81	65 to 62	Lake Erie.....	63	52
The South Atlantic coast.....	72 to 81	70 to 59	Lake Michigan.....	56 to 62	51 to 49
			Lake Superior.....	49 to 52	45 to 42

## ATMOSPHERIC ELECTRICITY.

(1.) *Thunder and lightning.*—There is not much change to note in the frequency of thunder and lightning, since September. There were numerous electrical storms, even in the northern part of the country and on the lakes. Zig-zag lightning was reported at Duluth on the 25th and Buffalo on the 10th; thunder and lightning at Pembina, D. T., on the 24th and 25th; at Fort Randall, D. T., on the 4th, 24th and 28th; Rock Island Arsenal, Ill., on the 27th; Fort Wallace, Kansas, on the 26th; at West Point, on the 27th; Fort Adams, R. I., on the 28th; Golden City, Col., on the 24th; at Louisville, Ill., on the 28th. On the night of the 27th a thunder-storm passed over Hartford, and on the 30th, at 5 a. m., a smart thunder-shower passed over New York city.

(2.) *Auroras.*—October, at least the early part of the month, was marked for its auroral displays. Among the most conspicuous of these were the auroras of the 2d, 3d, 4th, 5th, 6th, 7th, 12th, 13th, 14th, 15th, 16th and 17th. That of the 3d and 4th was extraordinary and extensive in its manifestations. It was seen at nearly all the northern stations, where the weather was favorable, *e. g.*, Buffalo, Portland, Me., Lexington, Ky., Port Huron, Mich., Peck's Beach and Long Branch, Norfolk. Boston, Atlanta, Wytheville, Va., Duluth, Minn., Eastport, Me., New Haven, Conn., Albany, Chicago, Davenport, Iowa, Detroit, Atlantic City, La Crosse, Wis., Keokuk, Iowa, and numerous other stations.